

## Data and signal line chokes

Common-mode chokes, ring core  
4.7 ... 10 mH, 200 ... 300 mA, +60 °C

**Series/Type:**            **B82794C2**

**Date:**                    August 2023



**Rated voltage 42 V AC/80 V DC**  
**Nominal inductance 4.7 ... 10 mH**  
**Rated current 200 ... 300 mA**



### Construction

- Current-compensated ring core quad choke
- Ferrite core
- Plastic case (UL 94 V-0)
- Silicone potting
- Bifilar winding

### Features

- Suitable for reflow soldering
- RoHS-compatible

### Function

Suppression of asymmetrical interference coupled in on lines, whereas data signals up to some MHz can pass unaffectedly.

### Applications

- Telecom applications
- RF equipment

### Terminals

- Base material CuSn6
- Layer composition Ni, Sn
- Hot-dipped

### Marking

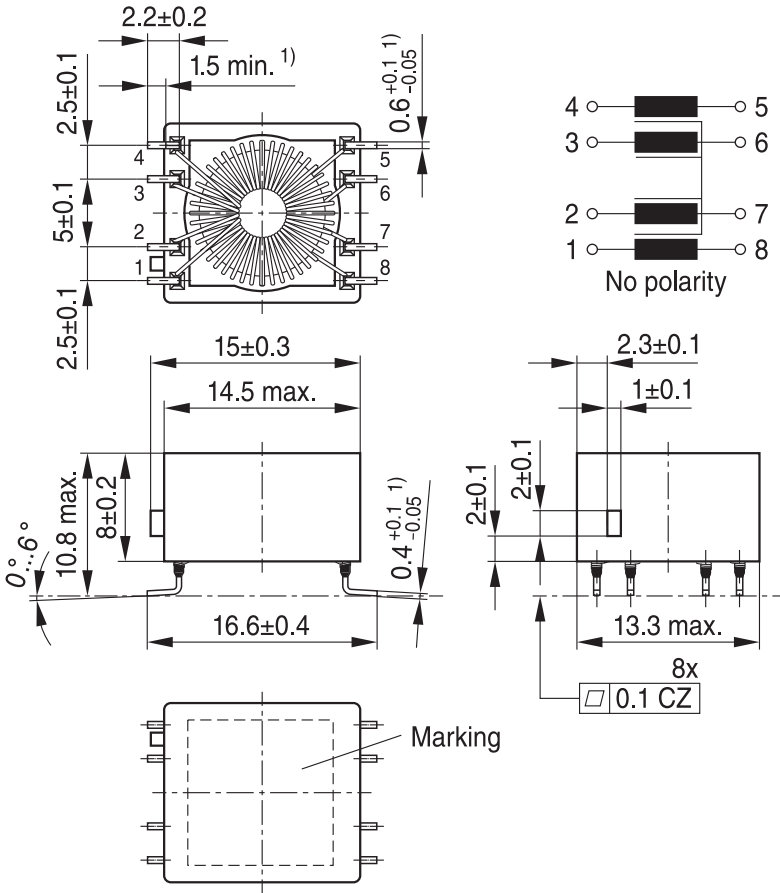
- Marking on component:  
Product brand (EPCOS), ordering code, inductance, graphic symbol, date of manufacture (YYWWD)
- Minimum data on reel:  
Manufacturer, ordering code, L value, current, quantity, date of packing

### Delivery mode and packing unit

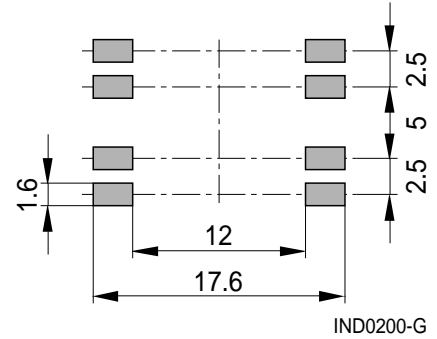
- 24-mm blister tape, wound on 330-mm  $\varnothing$  reel
- Packing unit: 250 pcs./reel



**Dimensional drawing and pin configuration**



**Layout recommendation**



1) Soldering area

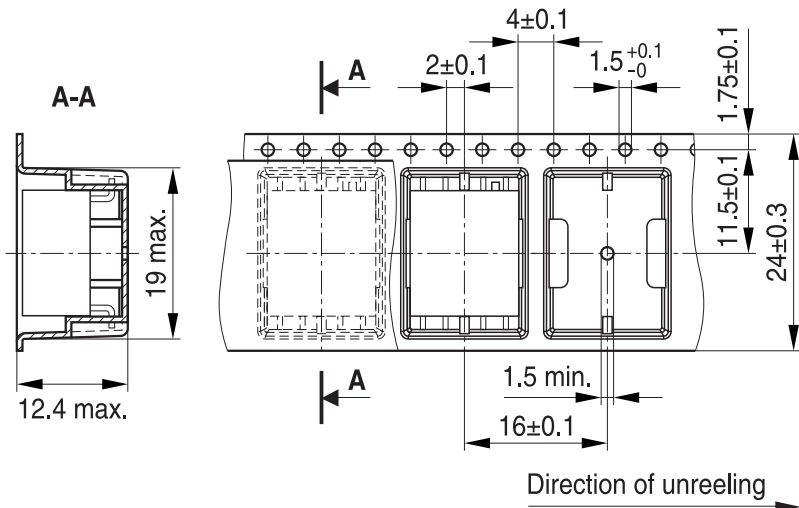
IND2137-8-E

IND2158-9-E

Part tolerances to ISO 2768-C / ISO 8015.  
Size ISO 14405 (E)  
All dimensions in mm

**Taping**

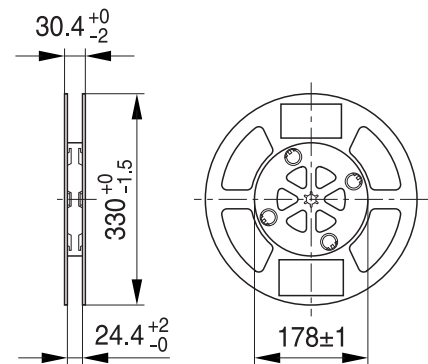
**Blister tape**



Dimensions in mm

IND0942-S-E

**Reel**



IND0941-R


**Technical data and measuring conditions**

Rated voltage $V_R$	42 V AC (50/60 Hz) / 80 V DC
Rated temperature $T_R$	+60 °C
Rated current $I_R$	Referred to 50 Hz and rated temperature
Nominal inductance $L_R$	Measured with Agilent 4284A at 10 kHz, 50 mV, +20 °C Inductance is specified per winding.
Inductance tolerance	-30%/+50% at +20 °C
Inductance decrease $\Delta L/L_0$	< 10% at DC magnetic bias with $I_R$ , +20 °C
Stray inductance $L_{\text{stray,typ}}$	Measured with Agilent 4284A at 10 kHz, 50 mV, +20 °C, typical values
DC resistance $R_{\text{typ}}$	Measured at +20 °C, typical values, specified per winding
Solderability (lead-free)	Sn96.5Ag3.0Cu0.5: +(245 ±3) °C, (3 ±0.3) s Wetting of soldering area ≥ 95% (to IEC 60068-2-58, test Td <sub>1</sub> , method 1)
Resistance to soldering heat	+(260 ±5) °C, (10 ±1) s (to IEC 60068-2-58, test Td <sub>2</sub> , method 1)
Climatic category	40/125/56 (to IEC 60068-1)
Storage conditions (packaged)	-25 °C ... +40 °C, ≤ 75% RH
Weight	Approx. 2.5 g

**Characteristics and ordering codes**

$L_R$ mH	$L_{\text{stray,typ}}$ nH	$I_R$ mA	$R_{\text{typ}}$ mΩ	$V_{\text{test}}$ V DC, 2 s	Ordering code
4.7	350	300	900	750	B82794C2475N465
10	900	200	1400	750	B82794C2106N465

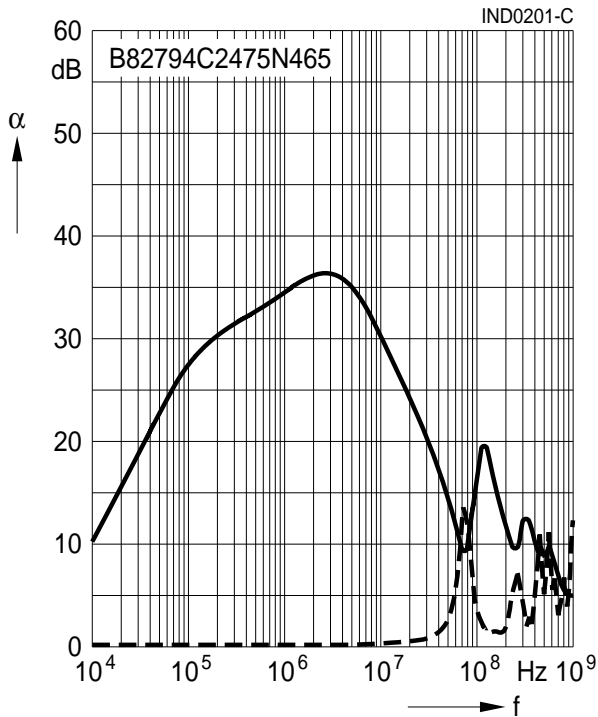


**Insertion loss  $\alpha$**  (typical values at  $|Z| = 50 \Omega$ ,  $+20^\circ\text{C}$ )

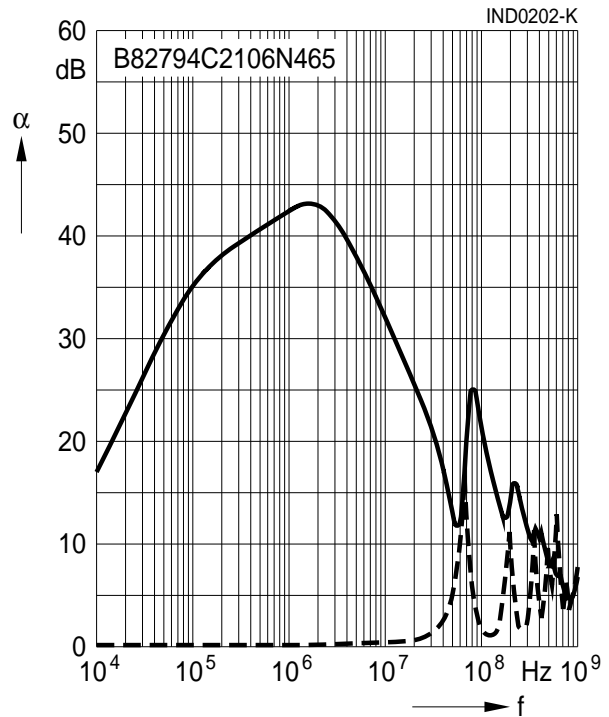
————— asymmetrical, all branches in parallel (common mode)

- - - - - symmetrical (differential mode)

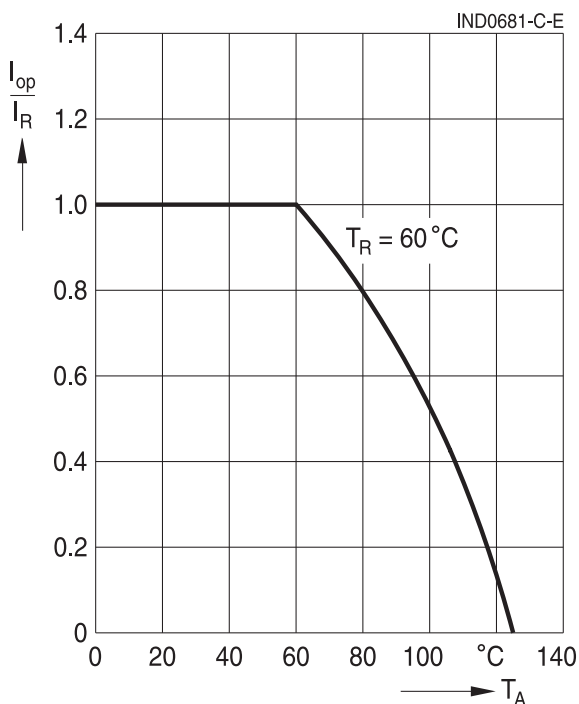
$L_R = 4.7 \text{ mH}$



$L_R = 10 \text{ mH}$



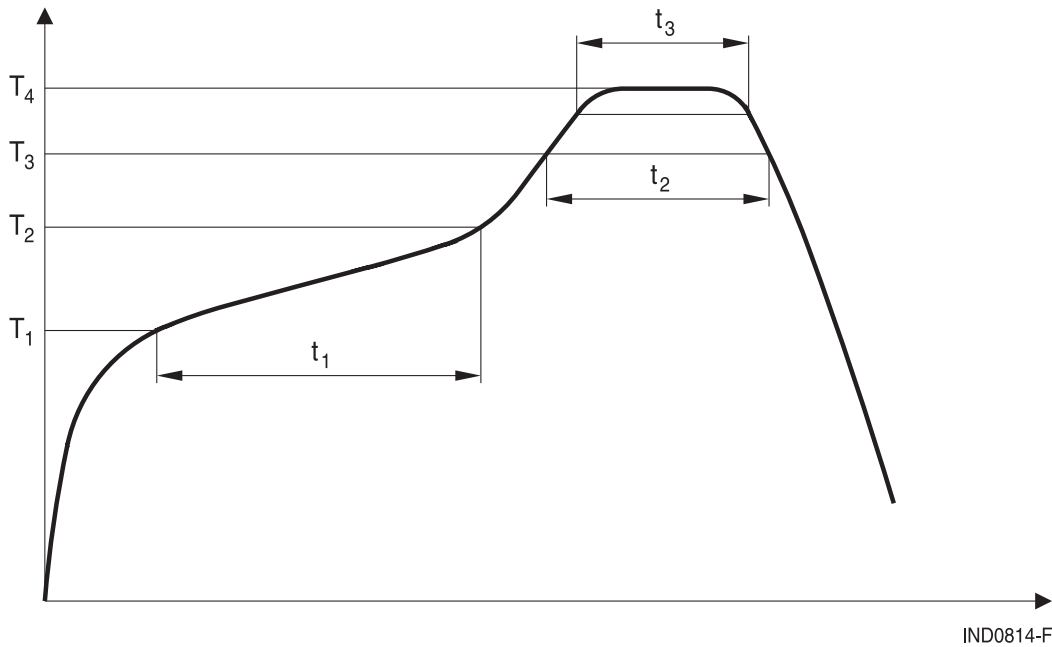
**Current derating  $I_{op}/I_R$  versus ambient temperature**





**Recommended reflow soldering curve**

Pb-free solder material (based on JEDEC J-STD 020E)



T <sub>1</sub> °C	T <sub>2</sub> °C	T <sub>3</sub> °C	T <sub>4</sub> °C	t <sub>1</sub> s	t <sub>2</sub> s	t <sub>3</sub> s
150	200	217	245	< 110	< 90	< 30 @ T <sub>4</sub> -5 °C

Time from +25 °C to T<sub>4</sub>: max 300 s

Maximal numbers of reflow cycles: 3

### Cautions and warnings

- Please note the recommendations in our Inductors data book (latest edition), online catalogs and in the data sheets.
  - Particular attention should be paid to the derating curves, if given. Derating applies in the case the ambient temperature in application exceeds the rated temperature of the component.
  - Ensure the operation temperature of the component in application, not to exceed the maximum specified value or the upper climatic category temperature.
  - The soldering conditions should also be observed. Temperatures quoted in relation to wave soldering refer to the pin, not the housing.
- If the components are to be washed varnished it is necessary to check whether the washing varnish agent that is used has a negative effect on the wire insulation, any plastics that are used, or on glued joints. It is possible for washing varnish agent residues to have a negative effect in the long-term on wire insulation.
 

Washing processes may damage the product due to the possible static or cyclic mechanical loads (e.g., ultrasonic cleaning). They may cause cracks to develop on the product and its parts, which might lead to reduced reliability or lifetime.
- The following points must be observed if the components are potted, sealed, or varnished in customer applications:
  - Many potting, sealing or varnishing materials shrink as they harden. They therefore exert a pressure on the plastic housing or core. This pressure can have a deleterious effect on electrical properties, and in extreme cases can damage the core or plastic housing mechanically.
  - It is necessary to check whether the potting, sealing or varnishing materials used attacks or destroys the wire insulation, plastics, or glue.
  - The effect of the potting, sealing, or varnishing materials may change the high-frequency behavior of the components.
- Magnetic core materials such as ferrites are sensitive to direct impact. This can cause the core material to flake or lead to breakage of the magnetic core material.
- Any type of tension or pressure on the product may result in damage and affect its functionality and reliability.
  - The products are only to be attached to fixings or mounting holes provided for this purpose in accordance with the data sheet.
  - If additional mechanical forces are applied to the component, e.g., application of gap pads, it is necessary to check whether they attack or destroy any part of the component.
  - It is not permitted for the product specified in the data sheet to assume a mechanical function in the final application.
- Inductance value can drop if external metallic or magnetic parts will be put close to the coil or into the air gap of the coil or core or magnetic material.
- Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.

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2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
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## Important notes

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